

# "17-YEAR LOCUST" DUE THIS YEAR

**MOST MYSTERIOUS INSECT KNOWN TO SCIENTISTS WILL INVADE LARGE PART OF THE UNITED STATES.**

(Prepared by the U. S. Department of Agriculture.)

**T**HE most interesting insect in the world, the periodical cicada, is going to be seen, perhaps in very large numbers, during the coming spring and early summer over large regions of the United States where this brood has not appeared before for 17 years, and over other regions where another brood appeared 13 years ago. This is the insect commonly referred to as the "17-year locust," a name that is incorrect in at least two particulars. It is not a locust at all, that name being properly applied only to members of the grasshopper family, and while it has a 17-year period, it also has a 13-year period. It has been so long mislabeled by the name of locust, however, that there is no hope of divesting it of that incorrect appellation, and in the regions where there is the longer period of recurrence it will continue to be known as the "17-year locust," and in the areas of the shorter recurrence period as the "13-year locust." The scientifically accepted name of periodical cicada, therefore, is the only one that exactly fits.

The statement that this is the most interesting insect in the world will hardly be questioned anywhere, and it is the most interesting because it is the most anomalous, or possibly, because it has always appeared to be so mysterious. The fact that it appears in countless numbers one year, then is not seen again for half the average lifetime of human beings and then suddenly appears again in countless numbers, has kept the popular mind mystified and has woven many superstitions about the cicada. When it is known that the insects spend the 13 or 17 years in slow development beneath the ground and emerge at almost exactly the same spot where they entered the ground 13 or 17 years before—then the mystery disappears, but the interest, if anything, is intensified. One of the queerest things in nature is that in spite of such extremely slow growth in their subterranean habitat, all the millions of individuals attain maturity and burst from the ground at almost the same moment.

Every "locust year" is, in some sort, a year of fear and dread. It appears to have been so with the savages and has remained so with their civilized successors, notwithstanding the fact that the cicada has been under investigation for well over 200 years, and the appearance of the swarms are foretold by entomologists as accurately as eclipses of moon are foretold by astronomers. People have fancied that they could detect in the cry of the cicada a resemblance to the name of the monarch, Pharaoh, that persecuted the Israelites, and that occult belief or fear added to the somewhat dolorous sound has served to make the cry of the cicada generally an unwelcome one.

Very long ago some superstition attached to the dark bars of the filmy wings. These bars are always in the shape of the letter W, but few people remember that through a period of 13 or 17 years, and great significance is attached to it at each recurrence. Some prophet has arisen always to announce that the W on the locust's wings means "war." Since this outbreak will come just at the conclusion of the greatest war, and when even the imagination of the rural prophet could hardly conjure up the likelihood of another one, some new explanation will apparently have to be found this time. But no doubt the cicada will, as usual, be greeted as a harbinger of disaster, and, as usual, there will be reports of deaths caused by stings of the cicada, a belief that has persisted in spite of positive proof that the cicada has no sting, that only by the extreme accident could it inflict a wound either with bill or ovipositor, and that it could not, in any case, inject a poison.

**Injury Is Usually Overestimated.**  
Upon every appearance of large broods of the cicada, fear is aroused that trees will be destroyed, particularly young trees of the fruiting and ornamental species. There would seem to be some ground for such a fear. The number of the insects is so tremendous that one can hardly understand how they can deposit their eggs in the young and tender branches of the trees without killing them. Yet the fact remains that there have been outbreaks of cicadas in some sections of the United States in most of the years since this country was discovered and that no very grave damage ever yet has been done. Very young fruit trees sometimes are killed or seriously injured, but little or no permanent injury is done to forest trees or mature trees of any kind and measures of protection can be employed that will save the young and tender stock from serious injury.

Inasmuch as the coming 1919 brood of locusts may be one of the largest on record, it is particularly important to allay excessive fear of destruction to timber as well as to have people on guard, so that the few preventive measures possible may be applied. The belief that the 1919 brood will be exceptionally large is based on the fact that the 17-year brood coming out this year is brood 10, perhaps the largest of the 17-year broods, and that brood 18 of the 13-year family comes out at the same time. The year 1868 was the greatest locust year in history. In that year brood 19, the largest of the 13-year broods, appeared in conjunction with brood 10, the two combining to make an unprecedented infestation. The coincidence of the largest



OCURRENCE OF THE PERIODICAL CICADA IN 1919. LARGE DOTS REPRESENT DENSE AND SMALL DOTS SCATTERING COLONIES OF THE 17-YEAR LOCUST. CROSSES REPRESENT COLONIES OF THE 13-YEAR CICADA.

17-year brood with a smaller 13-year brood this year will not bring about conditions approaching those of 1868. The United States department of agriculture has long kept close check on all of the broods of both families and is able to say with almost complete accuracy just when and over what territory any brood will appear.

The two broods due this year are brood 10, which belongs to the 17-year family, and brood 18, which belongs to the 13-year family. Brood 10 has the widest distribution of any brood. Beginning at the eastern extremity of Long Island, it sweeps west and south to the Mississippi river at Cairo, Ill., and extends as far north as central Wisconsin and as far south as middle Georgia, with some isolated colonies as far northeast as upper Vermont, and one as far west as the boundary line between Iowa and Nebraska. The whole or portions of 20 states are included within this range. There are three regions of greater occurrence, one covering New Jersey, Maryland and eastern Pennsylvania; another covering all of Indiana, the greater part of Ohio and southern Michigan, and a third covering western North Carolina, eastern Tennessee, and northern Georgia.

Brood 18, the 13-year brood that comes out this year, is comparatively a small brood and is made up of scattered colonies rather than of the dense and compact swarms that mark the larger broods. Five states are affected by it—Alabama, Georgia, North Carolina, South Carolina, and Tennessee—but it touches only limited areas of these states.

**Cicadas Will Appear in May.**  
Latitude does not appear to materially affect the time of emergence from the ground, the cicada in the lake states coming out within a week or two of the same time as in the Gulf and South Atlantic states. This data ranges from the last week in May to the first in June, and the shrieking hosts may be looked for throughout the whole territory indicated at about that time. Late in May or early in June the under sides of leaves on practically all trees in dense brood areas will be studded with the cast skins and every wooded place will be resounding with the shrill drums.

A month later the desposition of eggs in branches will have become general.

Fear aroused by the presence of this insect in great numbers is out of proportion to the real damage likely to be done. People in infested sections should not become unduly alarmed, but should apply such methods of control as are possible. In young orchards and nurseries, the safest method is the hand collection of the insects at the time of emergence or as soon afterward as possible. Every cicada tries to climb some plant or tree immediately after coming out of the ground, and great numbers of them can be shaken off and collected in bags or umbrellas. This practice may be continued for an indefinite time after emer-

## When the "17-Year-Locusts" Come.

The year 1919 is likely to be one of the worst "locust years" on record. But entomologists of the United States department of agriculture see nothing alarming in the prospect.

The periodical cicada, the real name of the insect commonly called "locust," will appear this year in the following states: Alabama, District of Columbia, Delaware, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin. The injury done by the periodical cicada consists almost wholly in chiseling grooves in the branches of trees for depositing eggs. This injury always appears to be greater than it actually is. Popular alarm is usually out of proportion to general damage.

Young fruit trees are sometimes killed by the cicada. The precautionary measures are: Defer putting out young fruit trees till next year; postpone budding operations; do no pruning this winter or spring.

When the insects begin coming out, hand pick them from young fruit trees or spray them with pyrethrum powder, kerosene emulsions or a solution of carbolic acid or acetic acid.

Later, when the insects are ready to begin laying, spray young fruit trees with whitewash.

geance, and the work should be very early in the morning or late in the evening when the insects are somewhat torpid and sluggish.

### Insecticides Are Effective.

The destruction of the cicada may be accomplished with insecticides if applied at the moment of emergence from the ground or shortly after it has shed its pupal skin and is still soft and comparatively helpless. This kind of work can be made very successful in small areas, but could not be applied on a large scale. Best results are obtained with pyrethrum powder, kerosene emulsions, a 2 per cent solution of carbolic acid, or a 15 per cent solution of acetic acid, sprayed directly on the insects.

Not much success has been attained with washes or other applications to prevent oviposition. Ill-smelling substances appear not to repel the cicada. There are some indications that the insect dislikes to sit on a white surface, and therefore whitewash is believed to possess some efficacy as a preventive of oviposition, though the cicada will oviposit on whitewashed trees if no more pleasing place can be found. A spray of bordeaux mixture is also believed to have some value as a preventive.

Certain precautionary methods, however, are of more importance than the curative ones. In all regions where there is to be an appearance of the cicada, all pruning operations should be neglected during the preceding winter and spring in order to offer a larger twig growth and thus to distribute the damage over a greater surface. The planting of young orchards should be deferred until the danger is past, and the same advice applies to budding operations in the spring prior to the cicada's appearance.

## WESTERN MINING AND OIL NEWS

Western Newspaper Union News Service.

Attention has been called to a recent decision of the Department of the Interior by the Arizona State Bureau of mines in regard to an application received by the department for patent of a certain mining claim. This claim was located on lands after these had been withdrawn under the act of June 25, 1910, as amended by the act of Aug. 24, 1912. This amendment provides that lands so withdrawn shall at all times be open to exploration, discovery, occupation, and purchase under the mining laws of the United States, so far as the same apply to metalliferous minerals. A deposit of uranium, vanadium and radium occurred upon the claim referred to. In the decision of the Interior Department it was held that location on such deposits was possible, but, in the nature of things, such deposits were not metalliferous minerals and as such could not be patented in the face of withdrawal. This decision was based upon the fact that it is the salts of uranium, vanadium and radium that are mined and used in a commercial way, and not the metals in a native state, and that they are similar in nature to potash or aluminum and are earthy, and therefore, are not metals in the strictest sense. They are, however, classed as non-metallic minerals.

The geophone, invented during the war to determine the exact location of sounds above and beneath the surface of the earth soon will be used extensively in mining operations in this country, the bureau of mines announced in Washington. The instrument will be used in mining operations the bureau stated either for sounding purposes or in determining the location of men blocked from escape by caveins or explosions.

### Arizona.

After a wait of more than four months, Superintendent C. C. Arata is practically ready to resume operations at the Pittsburg-Jerome. A high-pressure compressor cylinder to replace the one that was broken on the 26th of October has been delivered in Jerome.

The executive board of the Association of Arizona Mining Men sent a telegram to Secretary of the Treasury Glass at Washington indorsing the movement reported as having been launched in New York to urge on the government the removal of restrictions on the shipping and price of exported silver. This announcement was made by President C. F. Reiniger of the association.

### New Mexico.

Three new oil companies have recently been incorporated in New Mexico. Articles of incorporation have been filed with the state corporation commission by the Bethlehem Oil Company of Roswell, capitalized at \$100,000. The Jornada Oil Company of Socorro has been incorporated by W. B. Buntun as statutory agent, William McDougall and George Keith of Carthage, N. M. The company is capitalized at \$100,000. The third company is the Quay Wichita Oil and Gas Company of Tucumcari, capitalized at \$40,000, by A. D. Goldenburg, Joseph Israel, R. A. Prentice, J. A. Street and M. H. Koch, all of Tucumcari.

### Wyoming.

The Hopewell Oil Company, a \$100,000 Colorado concern, filed its articles of incorporation at the state house, Cheyenne, thereby serving notice of its intention to extend its operations to Wyoming.

### Colorado.

There has been a sense of suppressed excitement in and about Lake City because of mineral discoveries and announcements that have been made during that time of mining projects that are to be undertaken in the districts with the opening of spring.

Reports are in circulation that a strike of rich ore has recently been made in the Bryan tunnel, at Black Hawk, of a grade of silver ore much above the average. The operators are so confident of the future of the property that they intend to extend the tunnel 500 feet further into the mountain and are getting pipe and equipment ready to commence on that development at once.

Another strata of oil-bearing sand was encountered slightly below the 2,800-foot level by drillers at the well of the Loveland Petroleum, Gas and Refining Company. Manager W. H. Jones of the company declared this to be a highly encouraging indication and said if the strata proved to be of adequate thickness, the well would be shot, as he believed production would be brought in.

The coming summer will see a line surveyed for a six-mile rail connection between Ironton and Ouray. The building of this "connecting link" of rail between the two camps is the sequel of the recent purchase by the Sunnyside Mining and Milling Company, a subsidiary of the United States Smelting, Refining and Mining Company of the Silverton Northern, the Silverton Gladstone and the Red Mountain-Ironton railroads.

## DANDRUFF MAKES HAIR FALL OUT

A small bottle of "Danderine" keeps hair thick, strong, beautiful.

Girls! Try this! Doubles beauty of your hair in a few moments.



Within ten minutes after an application of Danderine you can not find a single trace of dandruff or falling hair and your scalp will not itch, but what will please you most will be after a few weeks' use, when you see new hair, fine and downy at first—yes—but really new hair—growing all over the scalp.

A little Danderine immediately doubles the beauty of your hair. No difference how dull, faded, brittle and scraggy, just moisten a cloth with Danderine and carefully draw it through your hair, taking one small strand at a time. The effect is amazing—your hair will be light, fluffy and wavy, and have an appearance of abundance; an incomparable lustre, softness and luxuriance.

Get a small bottle of Knowlton's Danderine for a few cents at any drug store or toilet counter, and prove that your hair is as pretty and soft as any—that it has been neglected or injured by careless treatment—that's all—you surely can have beautiful hair and lots of it if you will just try a little Danderine.—Adv.

### World League of Women.

The group of 100 French girls sent over recently to American colleges for their education, and the deputations of representative French and English women who are bringing messages of gratitude and inspiration for us, are only a few indications of the growing feeling of oneness among the women of the world.

A man who neglects his own business can't be troubled to look after other people's affairs.

When a married man has no mind of his own his wife is apt to give him a piece of hers.

People who have nothing to do but visit are the worst kind of bores.

## IN MISERY FOR YEARS

**Mrs. Courtney Tells How She Was Cured by Lydia E. Pinkham's Vegetable Compound.**

Oskaloosa, Iowa.—"For years I was simply in misery from a weakness and awful pains—and nothing seemed to do me any good. A friend advised me to take Lydia E. Pinkham's Vegetable Compound. I did so and got relief right away. I can certainly recommend this valuable medicine to other women who suffer, for it has done such good work for me and I know it will help others if they will give it a fair trial."

—Mrs. LIZZIE COURTNEY, 108 8th Ave., West, Oskaloosa, Iowa.

Why will women drag along from day to day, year in and year out, suffering such misery as did Mrs. Courtney, when such letters as this are continually being published. Every woman who suffers from displacements, irregularities, inflammation, ulceration, backache, nervousness, or who is passing through the Change of Life should give this famous root and herb remedy, Lydia E. Pinkham's Vegetable Compound, a trial. For special advice write Lydia E. Pinkham Medicine Co., Lynn, Mass. The result of its long experience is at your service.

**BOYS Clear Your Skin With Cuticura**  
All druggists: Soap 25¢, Ointment 25¢ & 50¢, Talcum 25¢. Sample each free of Cuticura, Dept. E, Boston.